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**PULLING CATV AND
TELCOS TOGETHER** A strategic
alliance may be brewing as fiber
extends into the local loop

**NTIA REVIEWS
U.S. TELECOM NEEDS**
Results will help develop
policies for the 1990s

**FCC INVESTIGATES
NYNEX SUPPLY UNIT**
Agency audit reportedly finds
Nynex telcos were overbilled

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Hold on to your hat! A sense of humor could be helpful in weathering all the toils and spoils of expanding fiber into the local loop and on to the home during the 1990s. Cover photo by Reid Miles, courtesy of Corning Inc.

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By Dustin J. Becker. Copper has been the old standby for powering subscriber telephones—with good reason. But introducing fiber into the local loop has also introduced some power complications

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In My Opinion

No surprise here

When I started covering telecommunications in 1985, two of the biggest issues were the coming of the integrated services digital network and the threat of bypass of local exchange carriers.

How little things have changed.

This is the year that ISDN is supposed to really begin reaching the market. This also is the year that the bypass threat comes home to roost.

As we have chronicled in the pages of *Telephony* for some time, there is a burgeoning industry of fiber optic network companies in the nation's largest cities that are eager to siphon off big business traffic from the LECs. As Robert Murray of Strategic Planning Associates pointed out in last week's issue (page 32), local access will indeed be the battleground for the 1990s. And the new upstarts bring a sizable arsenal onto the field: newer networks, total fiber systems, lower overhead and the ability to more rapidly provide service. Unencumbered by the LECs' universal service requirements, bypassers can provide high-quality local service to the cream of the customer crop at competitive prices.



A recent *Wall Street Journal* article chronicled the success of companies such as Metropolitan Fiber Systems and Teleport, listing the major accounts those companies have lured away from the Bell companies.

Where the *Journal* piece went astray, however, was in reporting that bypass networks have come as a surprise to the telephone industry. If anyone should be surprised it should be the politicians, regulators and consumer groups who have argued for the past five years that the bypass threat is a figment of the telephone industry's

imagination. These are the same folks who prefer to keep LEC rates dependent on long-distance access charges by resisting efforts to move local rates closer to the cost of providing service.

Critics should begin to see now, however, that the economies of the marketplace will eventually work against residential ratepayers. Creating a situation in which it makes economic sense for large businesses to leave the public network will increase the cost of network maintenance for the rest of us. Furthermore, slowing the pace of public network modernization, as some state regulators wish to do in the interest of keeping rates down, will only hasten the migration of businesses.

Set against this backdrop, the challenge for LECs is clear, but difficult. First, they must work to bring their own costs in line, as many LECs are doing. Most of the seven Bell regional holding companies, for example, are currently in some phase of staff reduction. Pacific Bell most recently announced that it will cut 12,000 jobs (*Telephony*, Jan. 8, page 3).

Then they must make a more convincing case before state regulators for the kind of rate reform that will facilitate greater investment in network modernization. They must be willing to move more quickly to embrace new technology where it can help meet user needs and offer cost efficiencies. And they must work harder to develop the marketing skills necessary to survive in a competitive market.

Those regulators, on the other hand, cannot continue to take the health of the public network for granted. While they must remain sensitive to consumer needs, lower rates cannot be the overriding concern.

Difficult decisions loom ahead, as do many uncertainties. But one thing is certain: If considerable action isn't taken, the discussion five years from now won't be about the threat of bypass. It will be about how bypass decimated the public telephone network.

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Telephony

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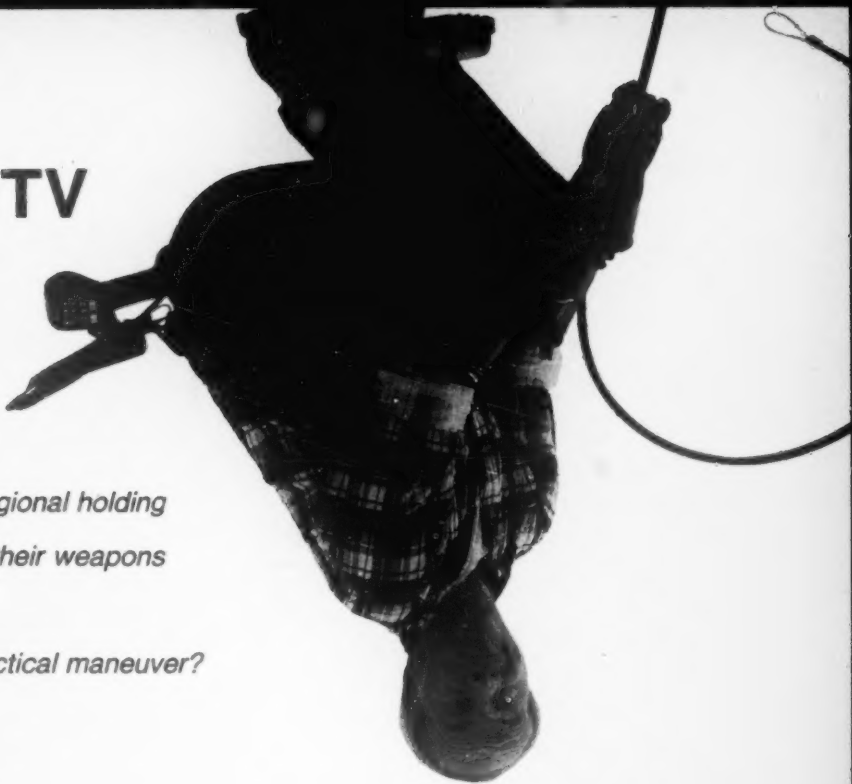
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Pulling cable TV and telcos together

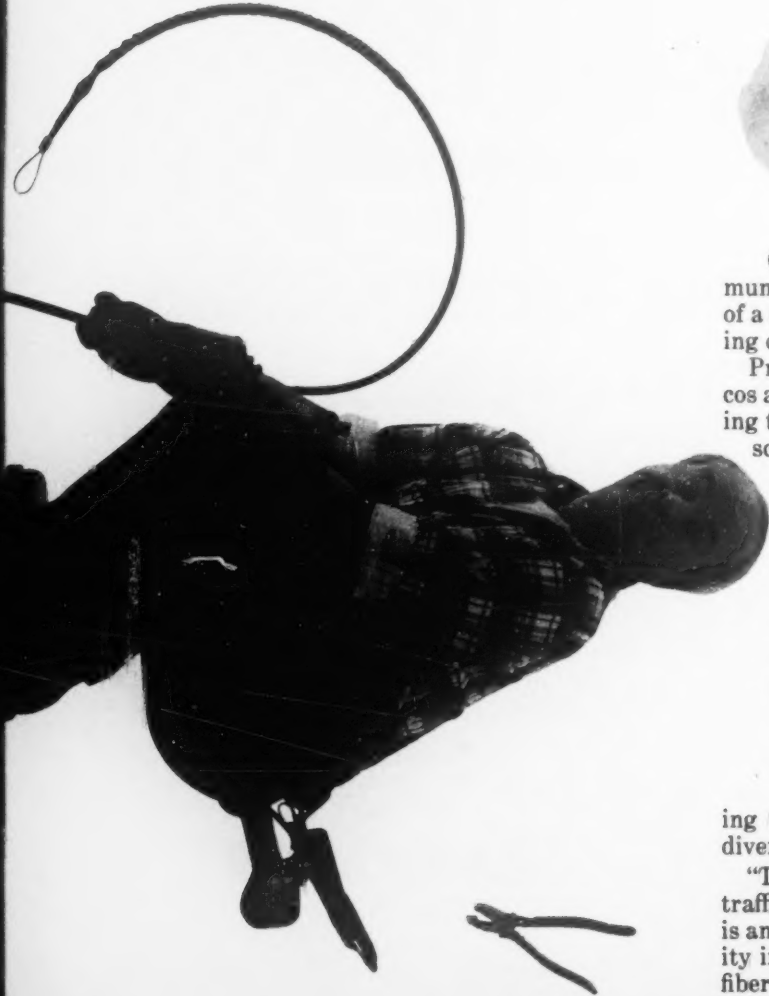
CATV companies and the Bell regional holding companies may be laying down their weapons and embracing each other.

But is it a strategic alliance or tactical maneuver?

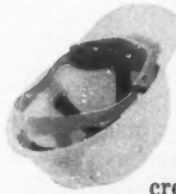
MICHAEL WARR, Technical Editor



It seems these days that everyone has a different opinion on whether or not some kind of strategic alliance or unification is good for the general public. In the world of politics millions are wondering whether or not the world can survive the reunification of East Germany and West Germany. In the less dramatic world of telecommunications some people are debating the viability of a strategic alliance between the Bell regional holding companies and cable television providers.



Proof that a marriage of convenience between telcos and CATV companies is a matter worth considering these days was provided at the Fiber in the Subscriber Loop ComForum in Orlando, Fla., last December. An entire session was dedicated to "CATV-Telco Strategic Relationships."



Behind the trend toward these strategic relationships is a number of different factors. Developers are strongly encouraging CATV/telco cooperation to hasten the deployment of high-tech fiber networks in their construction projects. Telcos and CATV companies see an increasing overlap of services that their networks can provide. Both are heading toward more interactive types of services and diversification. Both are installing fiber networks.

"This trend is based on the assumption that video traffic to the home is a major network driver. There is an overlapping and merging of interests and activity in video," says Ray McDevitt, associate director, fiber to the subscriber program for Alcatel. "Both



industries have to be wondering how this all fits together in their five- to 10-year plans."

CATV companies are also under the gun. Congress is considering reregulating the industry, and the Federal Communications Commission has opened a notice of inquiry into the CATV provider's service performance. For CATV companies, the growing dissatisfaction with cable is a major impetus in the search for cooperation.

In the eyes of Congress, "CATV companies are at an all-time low as a corporate citizen," according to Roy Neel, an aide to Sen. Al Gore, D-Tenn. Neel claims that thousands of letters are being mailed daily to Congress complaining about CATV companies' inadequate services and exorbitant price increases. In Boston, for instance, the basic fee increased 698% between 1986 and 1989.

Neel sees the experience and reputation that telcos have for rapid service response and the reliability of their networks as a competitive answer to CATV companies' bad record for outages and slow responses to customer service demands. "No CATV operator has ever expressed desire to provide universal services. The inability of telephone companies to be in cable has slowed down the availability of services," he argues.

Clearly, the telcos are encouraged by cable TV's dilemma and are seeking to take advantage of it.

"We have the expertise and the fiber facilities, and from [CATV companies'] point of view we offer an opportunity to gain experience in fiber technology," says Curtis Williams, director of strategic marketing at Southwestern Bell. "What we are able to do for the CATV companies relates to the quality of transport and response. CATV companies have an understanding of the marketing of programming."

John Coleman, area manager loop technology planning at Southwestern Bell, goes a step further.

"We have not been in the video transport business to individual subscribers, and this is an opportunity to learn more about the technology and what it takes to be in that business," he says.

But Christopher Coles, director of strategic alliance management at U S West, thinks it's a little more complicated than that.

"The telephone industry is in danger of selling the cable companies' technical expertise short. The systems they have constructed in the past are not representative of what they will construct in the future," says Coles. "It's a little arrogant to think we have the superior answer to what they are trying to deliver. We can learn a great deal about their ability to deliver broadcast signals from point to multipoint. To say that we can learn about programming from them is to suggest that we are interested in getting

into that business, when what we want to do is cooperate to build a network capable of supporting their business and ours."

Still, some regulators look askance at this evolving relationship between the telcos and CATV companies.

"Will these strategic alliances result in increased competition or reduced competition with a shared monopoly?" asks one FCC official, who asked not to be named. "I get a little nervous when I hear of two monopolies, one of them a de facto monopoly, talking about an alliance. You have to ask, 'Will the public benefit?'"

"Strategic alliances that increase competition could prove to be in the public interest," he says. "If a second cable company could lease transmissions from the telco and compete with the existing cable company, that would be in the public interest."

Eli Noam, commissioner at the New York Public Service Commission, and a ComForum panelist, agrees. "To the extent that cooperation reduces the chance of competition, it becomes a sort of collaboration that may not be in the public interest. I'd rather see them compete."

"There may be instances in trials and in evaluation of technology where it makes sense to the extent that a telco provides transmission, goes to a cable

Telcos and CATV companies see an increasing overlap of services that their networks can provide.

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Pulling Together *continued*

company and says 'you provide content,'" Noam says. "I would be troubled that such an arrangement would be exclusive in anything but a trial. Only one cable company would have access to that fiber optic [system]. That would lead to a change in the traditional common carrier role of the telephone company, which provides service to anybody who pays the going rate, instead of giving exclusive access."

Marriage On Trial

Joint CATV/telco trials are indeed going on in fiber-to-the-home projects. Southern Bell's Hunter's Creek, Fla., trial started in November 1986 and will include a total of 251 homes. Southern Bell also provides CATV transport at Heathrow, Fla., a trial that started in June 1988 and will eventually reach 4000 homes. Bell of Pennsylvania started its Perryopolis trial in January 1989 serving 100 homes. GTE also transports CATV in Cerritos, Calif., where it plans to eventually serve 5000 homes. GTE's CATV trial is different from the others, however, because it partially owns the cable company.

The latest CATV/telco collaboration was announced at ComForum by Southwestern Bell Telephone and Sammons Communications Inc. The location is Mira Vista, a community in Fort Worth, Texas.

Although it took some of the earlier CATV/telco trials more than a year to get FCC clearance of their 214 petitions, which basically state that the CATV company is a willing participant, it took Southwestern Bell three months. That time frame is an improvement, but still longer than most CATV companies are willing to wait, according to Coleman at Southwestern Bell.

The Mira Vista trial will be the first to integrate video and POTS over single-mode fiber, says Coleman. It will serve nearly 100 homes.

American Lightwave Systems' FT 1300 super trunking system is a major component of the Mira Vista network. The receive end of the FT 1300 is located in a controlled environment vault in the Mira Vista subdivision and the transmit end is located in Sammons' headend building in the south-central portion of Fort Worth.

The FT 1300 picks up the baseband 4.5-MHz audio signal from Sammons, converts it to an FM optical signal and transmits it optically downstream over single-mode fiber, putting 29 channels on each of two fibers for a total of 58 channels.

The system also includes an American Lightwave Systems broadband switching system 3, which resides in Southwestern Bell's CEV. This is an analog FM broadband switch that picks up the 58 channels and enables any four of those signals to be simultaneously selected by the residential customer. Before these signals get to the customer's set-top unit, however, they pass through an optical network interface on the side of the customer's house, where they are converted from optical to electrical signals.

As of early January this system was not yet operating on a multiresidential basis. Although there is a

software problem that needs to be resolved, it is not expected to hold up the trial, according to Coleman. The problem is that the ALS system provides a standard interface to the CATV billing system, but Sammons does not use the typical billing system. The two companies are developing a working interface.

Otherwise, all the basic equipment is available,

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Some skeptics see the relationship between CATV companies and telcos as a fling that ultimately will end in one or the other dominating the cable industry.



Sampling of Cable TV Price Increases 1986-1988

City	'86 Basic Fee	'88 Basic Fee	% Change
Dallas	\$ 2.95	\$14.95	+407%
Fort Worth	7.45	11.95	+60
Houston 1	9.00	17.00	+112
2	12.55	17.00	+43
Seattle	2.00	15.95	+698
Northborough	5.55	17.45	+109
St. Louis	5.00	16.23	+80
Kansas	12.95	16.95	+31
Seattle	10.55	17.35	+64
Vancouver	3.95	14.95	+278
Phoenix	9.50	17.70	+86
Tucson	11.25	16.00	+42

Source: NCTA report submitted to Congress based on data from the Telephone and Cable Price Book.



Pulling Together *continued*

including the standard set-top unit used for descrambling signals. But there are problems with the converter box that sits on top of many television sets throughout the country today.

To Convert, Or Not To Convert

Robert Saunders, director of engineering at Sammons, expresses the need to remove the converter because of limitations it imposes on television and VCR features, an industrywide problem.

"Anytime you put a box of some type between all signals available on a system and the customer's receiver you place some limitations on the capability of the receiver. When it's limited to four channels, you take away from the customer. Picture-in-picture features, for instance, are not compatible," explains Saunders.

Southwestern Bell also is concerned with this problem.

"With cable-ready TV and picture-in-picture being more prevalent, we need to get away from a set-top unit architecture because it limits the capabilities of the television. If you have a TV with picture-in-picture and a VCR, you would require three set-top units. Most people don't want three units on top of their TV. Along with the CATV companies, we have to come up with a video trap system that eliminates the set-top unit or provides a set-top unit that has multiple outputs," says Coleman.

Saunders would not comment on the development of a new set-top unit, but some manufacturers are working on a prototype.

"Most marketing studies show that the buyer rate for interactive systems where the user walks to the set-top box and pushes a button is higher than that for calling a number. It's a Catch-22," notes Alcatel's McDevitt. "You want to get rid of the boxes but you need interactivity. We believe there will be a new unit that allows broadcast channels but also offers interactive ability."

McDevitt envisions a network that will have a set-top box that is not a converter. The cable would still go into the box but so would the VCR, allowing both convenient use of the VCR and interactivity. This box would not have to tune through all the incoming channels. Alcatel is working on a new set-top box, according to McDevitt.

We Can Work It Out

The CATV network and the telco network, despite their recent relationships, have distinct characteristics. And if the relationship is to be long term, these differences will have to be ironed out.

"There are problems with different architectures," says Coles at U S West. "We are looking at architectural alternatives because the requirements will be different for a long time. CATV architecture is point to multipoint and ours is point to point. We have to integrate those two requirements."

McDevitt sees both industries moving toward a "classic telephone" network. "The classic CATV architecture was a tree and branch," he says. "By putting fiber into the transport trunk instead of one tree, there are now a lot of trees feeding, like a star, into multiple points. So the change is more toward a star architecture."

Even with all the differences, telco, CATV and manufacturing officials believe collaboration is possible with a few adjustments. Meanwhile, the FCC has opened a notice of inquiry on the CATV industry's performance based on the Cable Act of 1984, which virtually deregulated cable television. The report will be given to Congress in July. Although the inquiry will not directly address the cable/telco cross-ownership issue, the FCC will consider whether the act should be amended to allow two or more competing cable systems in each community. Some telcos want to be that competitor.

But regulators don't expect dramatic change.

"If I were a betting person, I'd say we will not see repeal of cross-ownership laws," the FCC official predicts. "But there will be movement to facilitate telco transmission of other parties' content and telco broadband distribution for competition against incumbent CATV companies. There will be some sort of repeal, but not a full repeal."

Some skeptics see the relationship between CATV companies and telcos as a fling that ultimately will end in one or the other dominating the cable industry. Sammons' Saunders expresses the CATV companies' concern: "If the telephone companies want to be in the CATV business, we have a problem. If they want to be in the transport business, they should say that."

Even as Sammons develops a joint trial with Southwestern Bell, Saunders thinks it is too soon to determine which business the telco ultimately wants to be in.

There are also optimists, like McDevitt at Alcatel. "While there is always a need for sabre rattling, in reality the prudent businessmen will prevail. One is not going to blow the other away." ■